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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/852,717 | 05/11/2001 | Byoung-Sun Na | 06192.0226.AA | 5193 |

7590 04/21/2005
MCGUIRE WOODS LLP
1750 TYSONS BOULEVARD
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MCLEAN, VA 22102

EXAMINER

ERDEM, FAZLI

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2826

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/852,717

Applicant(s)

NA ET AL.

Examiner

Fazli Erdem

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-20 is/are allowed.
- 6) ☒ Claim(s) 1,2,6-9,21,22,25,26,28,29,32,33,35,37 and 38 is/are rejected.
- 7) ☒ Claim(s) 3-5,10,23,24,27,30,31,34,36 and 39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Allowable Subject Matter

1. Claims 11-20 allowed.
2. Claims 3-5, 10, 23, 24, 27, 30, 31, 34, 36 and 39 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 6-9, 21 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (5,085,973) in view of Akiyama et al. (5,754,263) further in view of Itoh (5,847,793).

Regarding Claims 1,2,6-9,21 and 22 Shimizu et al. disclose a colored filter element containing layers of polymerizable composition where in Fig. 1, black matrix 2b is located on transparent electrode 2c which is located on oriented plate 3. Shimizu et al. fail to disclose transparent electrode on the insulating substrate and the black matrix on transparent electrode. However, Akiyama et al. disclose a liquid crystal display apparatus with silicon or silicon-germanium thin films cover spaces between electrodes where in Fig. 5, transparent electrodes 63a are located in glass substrate 62a.

Furthermore, Itoh discloses a liquid crystal display apparatus and fabrication thereof

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where in Fig. 3 black matrix 25, transparent electrode 21 and substrate 21 are disclosed on the required manner.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required transparent electrode/insulating substrate and the black matrix/transparent electrode relationship in Shimizu et al. as taught by Akiyama et al. and Itoh respectively, in order to have a liquid crystal display device with higher reliability.

5. Claims 25, 26, 28, 29, 32, 33, 35, 37 and 38 rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (5,085,973) in view of Itoh (5,847,793) further in view of Kim et al. (5,784,133) further in view of Sonoda et al. (6,433,852).

Regarding Claims 25, 26, 28, 29, 32, 33, 35, 37 and 38, Shimizu et al. disclose a colored filter element containing layers of polymerizable composition where in Fig. 1, black matrix 2b is located on transparent electrode 2c which is located on oriented plate 3. Shimizu et al. fail to disclose the required , black matrix/substrate, black matrix/color filter and the protrusion/color filter configurations. However, Itoh et al. disclose a liquid crystal display apparatus and fabrication thereof where in Fig. 3 black matrix 25, transparent electrode 21 and substrate 21 are disclosed on the required manner. Furthermore, Kim et al. disclose a structure of liquid crystal display and manufacturing method thereof where in Figs. 5A and 5B, black matrix layer 45 is formed on the plate containing color filter. Finally, Sonoda et al. disclose a liquid crystal display device having a spacer where in Fig. 2, protrusion SP1 is formed on color filter.

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It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required black matrix/substrate, black matrix/color filter and protrusion/color filter configurations in Shimizu et al. as taught by Kim et al. and Sonoda et al. in order to have a liquid crystal display device with increased performance.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fazli Erdem whose telephone number is (571) 272-1914. The examiner can normally be reached on M - F 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FE
April 14, 2005

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER